

WHAT IS CLAIMED IS:

1. An isolated human anti-CD40 antibody or fragment thereof that specifically binds CD40 and modulates an activity of CD40.
2. The human anti-CD40 antibody of claim 1, wherein the antibody is monoclonal.
3. The human anti-CD40 antibody of claim 2, wherein the antibody is produced by a hybridoma cell line or subclones thereof, and wherein the antibody is denoted as no. 11 or 72, or the hybridoma is denoted as F1-102, F5-152, F2-103, F5-77, F5-157 or F4-465.
4. The human anti-CD40 antibody of claim 1, wherein the antibody has the CD40 binding specificity of the antibody denoted as no. 11 or 72, or the antibody produced by the hybridoma denoted as F1-102, F5-152, F2-103, F5-77, F5-157 or F4-465.
5. The human anti-CD40 antibody of claim 1, wherein the antibody has a CD40 modulating activity of the antibody denoted as no. 11 or 72, or the antibody produced by the hybridoma denoted as F1-102, F5-152, F2-103, F5-77, F5-157 or F4-465.
6. The human anti-CD40 antibody fragment of claim 1, wherein the fragment comprises an scFv, Fab, Fab', or F(ab')₂ fragment.
7. The human anti-CD40 antibody fragment of claim 6, wherein the fragment comprises a fragment of the antibody denoted as no. 11 or 72, or the antibody produced by the hybridoma denoted as F1-102, F5-152, F2-103, F5-77, F5-157 or F4-465.
8. The human anti-CD40 antibody of claim 1, wherein the antibody is detectably labeled.
9. The human anti-CD40 antibody of claim 1, wherein the CD40 is human.
10. The human anti-CD40 antibody of claim 1, wherein the antibody decreases binding of a CD40 ligand to CD40.

11. The human anti-CD40 antibody of claim 1, wherein the antibody increases binding of a CD40 ligand to CD40.
12. The human anti-CD40 antibody of claim 1, wherein the antibody decreases a CD40 activity.
- 5 13. The human anti-CD40 antibody of claim 12, wherein the antibody contains a lambda light chain sequence.
14. The human anti-CD40 antibody of claim 12, wherein the antibody decreases proliferation of a cell expressing CD40.
15. The human anti-CD40 antibody of claim 14, wherein the cell is a B-cell.
- 10 16. The human anti-CD40 antibody of claim 12, wherein the antibody decreases expression of a protein.
17. The human anti-CD40 antibody of claim 16, wherein the protein comprises CD95, CD80 or CD86.
18. The human anti-CD40 antibody of claim 1, wherein the antibody increases a CD40 activity.
- 15 19. The human anti-CD40 antibody of claim 18, wherein the antibody increases proliferation of a cell expressing CD40.
20. The human anti-CD40 antibody of claim 19, wherein the cell is a B-cell.
21. The human anti-CD40 antibody of claim 18, wherein the antibody increases expression of a protein.
- 20 22. The human anti-CD40 antibody of claim 21, wherein the protein comprises CD95, CD80 or CD86.
23. The human anti-CD40 antibody of claim 1, further comprising a pharmaceutical formulation.
- 25 24. A host cell that expresses the antibody of claim 1.

25. A nucleic acid that encodes the antibody of claim 1.
26. A host cell containing the nucleic acid of claim 25.
27. A method of producing a human CD40 antibody that modulates an activity of CD40 comprising:
- 5 (a) administering CD40 or an immunogenic fragment thereof to a mouse capable of expressing human immunoglobulin;
- (b) screening the administered mouse for expression of a human CD40 antibody;
- (c) selecting a mouse that produces a human CD40 antibody;
- 10 (d) isolating an antibody from the mouse that produces a human CD40 antibody; and
- (e) determining whether the human CD40 antibody modulates an activity of CD40 thereby producing a human CD40 antibody that modulates an activity of CD40.
- 15 28. A method of producing a human CD40 monoclonal antibody that modulates an activity of CD40; comprising:
- (a) administering human CD40 or an immunogenic fragment thereof to a mouse capable of expressing human immunoglobulin;
- (b) isolating spleen cells from the mouse that produces a human CD40 antibody;
- 20 (c) fusing the spleen cells with a myeloma cell to produce a hybridoma; and
- (d) screening the hybridoma for expression of a human CD40 antibody that modulates an activity of CD40 thereby producing a human monoclonal CD40 antibody that modulates an activity of CD40.

29. A monoclonal antibody isolated from a hybridoma produced by the method of
claim 28.
30. A method for modulating a CD40 activity comprising contacting a cell that
expresses CD40 with a modulating amount of the antibody of claim 1.
- 5 31. The method of claim 30, wherein the CD40 is human.
32. The method of claim 30, wherein the CD40 activity is increased.
33. The method of claim 32, wherein the increased CD40 activity comprises increased
CD95, CD80 or CD86 expression.
- 10 34. The method of claim 32, wherein the increased CD40 activity comprises increased
cell proliferation.
35. The method of claim 30, wherein the CD40 activity is decreased.
36. The method of claim 35, wherein the decreased CD40 activity comprises decreased
CD95, CD80 or CD86 expression.
- 15 37. The method of claim 36, wherein the decreased CD40 activity comprises decreased
cell proliferation.
38. The method of claim 37, wherein the decreased CD40 activity inhibits CD40L
stimulated cell proliferation.
39. The method of claim 30, further comprising contacting the cell with a CD40
ligand.
- 20 40. The method of claim 30, wherein the antibody has the binding specificity of the
antibody denoted as no. 11 or 72, or the antibody produced by the hybridoma
denoted as F1-102, F5-152, F2-103, F5-77, F5-157 or F4-465.
41. The method of claim 30, wherein the antibody is denoted as no. 11 or 72, or the
antibody produced by the hybridoma denoted as F1-102, F5-152, F2-103, F5-77,
25 F5-157 or F4-465.

42. The method of claim 31, wherein the antibody has a CD40 modulating activity of the antibody denoted as no. 11 or 72, or the antibody produced by the hybridoma denoted as F1-102, F5-152, F2-103, F5-77, F5-157 or F4-465.
43. A method of increasing a CD40 activity in a subject comprising administering to the subject an amount of a human anti-CD40 antibody that increases a CD40 activity.
44. A method of decreasing a CD40 activity in a subject comprising administering to the subject an amount of a human anti-CD40 antibody that decreases a CD40 activity.
- 10 45. A method of ameliorating an immune disorder or inhibiting an undesirable immune response in a subject comprising administering to the subject an amount of a human anti-CD40 antibody that decreases a CD40 activity thereby ameliorating the immune disorder or inhibiting the undesirable immune response.
- 15 46. The method of claim 45, wherein the undesirable immune response comprises host rejection of a transplanted cell, tissue or organ.
47. The method of claim 45, wherein the undesirable immune response comprises inflammation.
48. The method of claim 45, wherein the immune disorder comprises autoimmunity.
49. The method of claim 45, wherein the immune disorder comprises a lymphoma, a
20 leukemia or a myeloma.
50. A method of ameliorating an immune disorder in a subject comprising administering to the subject an amount of a human anti-CD40 antibody that increases a CD40 activity thereby ameliorating the immune disorder.
51. The method of claim 50, wherein the immune disorder comprises an
25 immunodeficiency.

52. The method of claim 50, wherein the immune disorder comprises a cell proliferative disorder.
53. The method of claim 52, wherein the cell proliferative disorder comprises benign hyperplasia or a cancer.
- 5 54. A method of inducing or stimulating an immune response in a subject, comprising administering to the subject an amount of a human anti-CD40 antibody that increases a CD40 activity thereby inducing or stimulating an immune response.
55. The method of claim 54, wherein the immune response is stimulated against a cell proliferative disorder or an infection by a pathogen.
- 10 56. The method of claim 55, wherein the cell proliferative disorder comprises a tumor.
57. The method of claims 45, 50 or 54, wherein the method is performed prophylactically.
- 15 58. A method of detecting the presence of CD40 in a sample or a cell, comprising contacting a sample having or suspected of having CD40, or a cell expressing or suspected of expressing CD40, with the antibody of claim 1, and detecting the presence of CD40 in the sample or cell.
59. The method of claim 58, wherein the sample comprises a tissue, fluid or other specimen from a subject.
60. The method of claim 59, wherein the cell is in a subject.
- 20 61. A method of detecting the presence of a disorder associated with increased or decreased CD40 expression in a human, comprising contacting a sample having or suspected of having CD40 or a cell expressing or suspected of expressing CD40, wherein the sample or cell is from or present in the human, with the human anti-CD40 antibody of claim 1, and detecting the presence of increased or decreased CD40 expression in the sample or cell relative to a control thereby detecting the presence of a disorder associated with increased or decreased CD40 expression in the human.

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